

TOUR D'HORIZON OF LITERATURE 2016

In order to give an overview of key literature in the area of inter- and transdisciplinarity, td-net invites every year experts in the field to list recent key publications (see list of contributors). In this document, we present new literature published in 2016 with short annotations written by the experts that recommended the publications.

We would like to thank the contributors for their inputs and are looking forward to another productive year for inter- and transdisciplinary research.

All previous “Tour d’Horizon of Literature” issues can be found on [our website](#).

This document is interactive, since several references are hyperlinked with the matching website.

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General overviews

Palgrave Communications

Palgrave Communications is a new online journal. It has made interdisciplinarity one of its thematic foci, and has published many articles that may be of interest. (rs)

Repko, A.F., R. Szostak, and M. Phillips Buchberger (2016): *Introduction to Interdisciplinary Studies*. 2nd ed., Thousand Oaks: Sage.

This textbook is designed to introduce first or second year undergraduates to the nature and importance of interdisciplinary analysis. The second edition has been fully revised to reflect developments in the literature as well as the detailed comments of six instructors. In chapter 1, for example, there is more information on career prospects for interdisciplinary students, the value of the skills associated with interdisciplinary education, and the evaluation of interdisciplinary programs. (wn)

The I2Insights blog

This blog provides a forum for presenting and discussing theory, concepts, methods and experiences relevant to transdisciplinary research and education. It aims to promote communication across a range of currently fragmented research communities. At the end of 2016 the blog was one year old, had published 100 blog posts, had had 109 contributors from more than 20 countries and more than 40,000 views from readers spread across 156 countries. (gb)

Conceptual contributions

Defila, R., A. Di Giulio, and M. Schäfer (2016): *Hotspots der transdisziplinären Kooperation – Ausgangslagen von besonderer Bedeutung*. In: R. Defila and A. Di Giulio, eds: *Transdisziplinär forschen - zwischen Ideal und gelebter Praxis. Hotspots, Geschichten, Wirkungen*. Frankfurt a. M., New York: Campus Verlag, p. 27-89.

The authors describe what they call "Hotspots" of transdisciplinary collaboration. Hotspots are constellations enabling innovative, successful and productive transdisciplinary research and, at the same time, holding a high risk of failure. The Hotspots are based on long-standing experiences in different fields. They provide a framework to analyse research projects and point out to problems caused by these constellations that might come up in a projects and how one could cope with them. (lk)

Helming, K., et al. (2016): *Forschen für nachhaltige Entwicklung: Kriterien für gesellschaftlich verantwortliche Forschungsprozesse*. *GAIA - Ecological Perspectives for Science and Society*, 25(3), p. 161-165.

Relevant contribution to the conceptualization of research in responsibility with respect to sustainable development and to the mode of transformative research;
Framework allows for critically analyzing basic and applied research, every research field and level of research processes;
Article deserves broader consideration in debates in and about research. (tm)

Jahn, T. and F. Keil (2016): *Reallabore im Kontext transdisziplinärer Forschung*. *GAIA - Ecological Perspectives for Science and Society*, 25(4), p. 247-252.

Relevant contribution to the integration of real-world laboratories in transdisciplinary research processes;
Conceptual framework and interesting ideas for an emerging issue. (tm)

O'Rourke, M., S. Crowley, and C. Gonnerman (2016): *On the nature of cross-disciplinary integration: A philosophical framework*. Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences, 56, p. 62-70.

As integration is identified by many authors to be the defining element of interdisciplinary research, this is a welcome philosophical analysis of what according to a literature review integration amounts to. It then offers a description of the integration process, its inputs and outputs. (mk)

Tempelhoff, J. (2016): *Exploring panarchy and social-ecological resilience: Towards understanding water history in precolonial Southern Africa*. Historia, 61, p. 92-112.

Working from Gunderson and Holling's concept of panarchy, the objective is to lay down a theoretical framework in terms of social ecological resilience for the hermeneutic interpretation of southern Africa's precolonial water history. The study urges historians to use transdisciplinary research strategies to explore other disciplines for a better understanding of the way in which society is shaped by natural resources, e.g. water. (jt)

Science studies on inter- and transdisciplinary research

Boix Mansilla, V., M. Lamont, and K. Sato (2016): *Shared Cognitive–Emotional–Interactional Platforms: Markers and Conditions for Successful Interdisciplinary Collaborations*. Science, Technology & Human Values, 41(4), p. 571-612.

Boix Mansilla and colleagues search for factors and markers of success in large interdisciplinary projects. The value of their analysis is that they not only look at the level of cognition and social interaction, but also of emotion. (cp)

Dankel, D.J., K. Stange, and K.N. Nielsen (2016): *What hat are you wearing? On the multiple roles of fishery scientists in the ICES community*. ICES Journal of Marine Science, 73(2), p. 209-216.

This paper identifies four roles for scientists as developers , reviewers , judges , and messengers in transdisciplinary arenas where management plans are produced and evaluated. While it may be difficult to separate the roles in practice, the paper argues that it must be emphasized to be aware of their different requirements to ensure that scientific credibility is not compromised. By asking the question "What hat are you wearing?", individual fishery scientists, their employers, and ICES as a network organization of expertise are encouraged to reflect on roles, affiliations, mandates, and possible consequences of wearing different "hats". (js)

Darbellay, F., A. Sedooka, and T. Paulsen (2016): *La recherche interdisciplinaire sous la loupe. Paroles de chercheurs*. Bern, Berlin, Bruxelles, Frankfurt am Main, New York, Oxford, Wien: Peter Lang.

Based on the results of a research on interdisciplinary practices, this book investigates the multidimensionality of inter- and transdisciplinarity: What are the motivations of researchers to engage in interdisciplinary dialogue, what do they gain or lose? What are their academic and professional identities? Do institutional contexts favor or discourage interdisciplinary work, what are the ups and downs of an interdisciplinary collaboration, the possibilities or the difficulties to publish the results of interdisciplinary research or the stakes of its evaluation? From a pluralistic perspective of interdisciplinarity, the authors give priority to the researchers who make it live by catalysing its creative potentialities and addressing the challenges and obstacles that still hinder its development. (fd)

de Jong, S.P.L., T. Wardenaar, and E. Horlings (2016): *Exploring the promises of transdisciplinary research: A quantitative study of two climate research programmes*. Research Policy, 45(7), p. 1397-1409.

An interesting evaluation of two transdisciplinary climate research programmes in The Netherlands. Statistically analysing the results of a survey and a project database they find for instance that "[societal b]enefit is achieved

through informal involvement and a diversity of outputs, and much less by giving societal actors a prominent role or influence in the research process." (cp)

Di Giulio, A., R. Defila, and T. Brückmann (2016): "*Das ist halt das eine ... Praxis, das andere ist Theorie*" – Prinzipien transdisziplinärer Zusammenarbeit im Forschungsalltag. In: R. Defila and A. Di Giulio, eds: *Transdisziplinär forschen – zwischen Ideal und gelebter Praxis. Hotspots, Geschichten, Wirkungen*. Frankfurt a. M., New York:: Campus Verlag, p. 189-286.

Based on 20 in-depth interviews with both researchers and non-academic experts collaborating in four large transdisciplinary research projects, the authors present which principles actually informed the design and the evaluation of collaboration by those involved. Besides providing rich qualitative data on transdisciplinary collaboration, the results encourage readers to creatively make use of transdisciplinarity handbooks, that is, to adapt the guidance contained to the everyday reality of their projects. (lk)

Gaziulusoy, A.I., et al. (2016): *Identifying and addressing challenges faced by transdisciplinary research teams in climate change research*. *Journal of Cleaner Production*, 123, p. 55-64.

An ex-post analysis of the first 15 month of a transdisciplinary research project, which was structured by three overlapping action research cycles. An interesting table summarizes the different types of challenges that collaborative teams have to cope with. (cp)

Wuelser, G. and C. Pohl (2016): *How researchers frame scientific contributions to sustainable development: a typology based on grounded theory*. *Sustainability Science*, 11(5), p. 789-800.

This publication empirically explores how researchers conceive of and shape scientific contributions to solving sustainability challenges related to land use questions. It develops a typology showing that there is a considerable diversity of promising models. These vary for example with the (perceived) problem awareness of societal actors or with the importance researchers attribute to scientific interests. (gw)

Experience-based reports

Adame, D. and F. Panico, eds (2016): *Reaprendizaje transdisciplinario. Hacia una nueva manera de conocer*. Xalapa, Mexico: Universidad Veracruzana.

This book offers a set of essays written by researchers from different disciplines who share their experience of going towards transdisciplinarity from the interior knowledge. In the Latin-American context, the authors propose a change in the higher education based on transdisciplinary methodology, which puts in its center the human dignity. (bn)

Caruso, E., et al. (2016): *Lessons for Research Policy and Practice: The Case of Co-enquiry Research With Rural Communities*. *Journal of Research Practice*, 12(1), Article M1.

This is a reflective review of an international collaborative research project involving partner organisations from Europe and Latin America. The project was funded by the European Commission's Seventh Framework Programme for research and innovation. The article highlights barriers to effective collaboration in this context and outlines lessons learned for research policy and practice. (dd)

Defila, R. and A. Di Giulio, eds (2016): *Transdisziplinär forschen – zwischen Ideal und gelebter Praxis. Hotspots, Geschichten, Wirkungen*. Frankfurt a.M., New York: Campus Verlag.

The papers in the book shed light on variants of successful transdisciplinary collaborations. They show the reality of transdisciplinary collaborations as it is experienced by those in charge of managing the processes of integration, by researchers, and by participating non-academic experts. The aim of all contributions is to show how it has been done and how it can be done in balancing a dynamic reality and the requirements of scientific accuracy. (lk)

Fjelland, R. (2016): *When Laypeople are Right and Experts are Wrong: Lessons from Love Canal*. HYLE – International Journal for Philosophy of Chemistry, 22(1), p. 105-125.

Love Canal, a suburban town in New York State built on a waste disposal site of a former chemical factory, provoked one of the first major environmental controversies. The controversy raises many important problems, and the article focuses in particular on the uses of scientific knowledge and the role of scientists. The paper argues that context and values have to be taken into consideration in environmental controversies and concludes that in cases like Love Canal it is imperative to inform about uncertainty and to involve all stakeholders. (js)

Tools and methods

Huutoniemi, K. and P. Tapio (2016): *Transdisciplinary Sustainability Studies. A Heuristic Approach*. London: Routledge.

This book offers a fresh approach to practical and methodological concerns in transdisciplinary environmental and sustainability studies. It illustrates methodological means by which researchers, professionals, and decision-makers can address complex environmental issues. (fd)

Menken, S. and M. Keestra, eds (2016): *An Introduction to Interdisciplinary Research: Theory and Practice*. Amsterdam: Amsterdam University Press.

This book is designed to help students understand the tools required for stepping beyond traditional disciplinary boundaries and applying knowledge and insights from multiple fields. Relentlessly focused on practical applications, the book will enable students to plan and execute their own interdisciplinary research projects. (fd)

New textbook presents first a theoretical introduction to and philosophical underpinning of interdisciplinary research. Second part presents a how-to-guide, based upon a multi-step research process model for (under)graduate interdisciplinary research, targeting also team-work that includes (empirical) scientific and social scientific data acquisition. (mk)

Repko, A. and R. Szostak (2016): *Interdisciplinary Research. Process and Theory*. 3rd ed., Thousand Oaks: Sage.

This is a textbook on how to perform interdisciplinary research designed for senior undergraduates or graduate students. The third edition is completely revised, with the addition of Szostak as co-author. The revisions include expanded discussions of transdisciplinarity, integrative studies, and team science. (wn)

Funding inter- and transdisciplinary research

Bromham, L., R. Dinnage, and X. Hua (2016): *Interdisciplinary research has consistently lower funding success*. Nature, 534(7609), p. 684-687.

Useful analysis and data presentation of the obstacles that interdisciplinary research projects face in terms of getting funding. For this the authors developed a new and useful metric for interdisciplinary distance, which facilitates quantification of the familiar distinction between narrow and broad interdisciplinarity. (mk)

Translational research

Felege, C., et al. (2016): *Bench, Bedside, Curbside, and Home: Translational Research to Include Transformative Change Using Educational Research*. Journal of Research Practice, 12(2), Article P1.

The article is a critical engagement with the current thinking and practice of translational research—i.e., the additional stages of systematic enquiry necessary to harness laboratory-based knowledge within professional or social practice. Using the field of medical research as an example, the article argues for the need to extend the current remit of translational research, so as to incorporate stakeholders who are outside of the professional or research community. (dd)

Vukotich, C.J.Jr. (2016): *Challenges of T3 and T4 Translational Research*. *Journal of Research Practice*, 12(2), Article P2.

This article identifies some challenges within the current thinking and practice of translational research—i.e., the process of conveying basic scientific knowledge into social policy and everyday practice. Taking medical research as a context, challenges are found with regard to getting research out of the highly controlled environment into the real world and carrying out the subsequent policy analysis and evaluation necessary. (dd)

Intervention research

Krainer, L. and R. Lerchster (2016): *Interventionsforschung: Anliegen, Potentiale und Grenzen transdisziplinärer Wissenschaft - eine Einführung*. In: R. Lerchster and L. Krainer, eds: *Interventionsforschung. Band 2: Anliegen, Potentiale und Grenzen transdisziplinärer Wissenschaft*. Wiesbaden: Springer, p. 1-7.

In their introduction the editors of the anthology discuss several potentials and limitations of intervention research in particular and of transdisciplinary research in general. (ag)

Lerchster, R. and L. Krainer, eds (2016): *Interventionsforschung. Band 2: Anliegen, Potentiale und Grenzen transdisziplinärer Wissenschaft*. Wiesbaden: Springer.

The anthology provides insights into potentials and limitations of transdisciplinary research from different perspectives and based on a sample of research projects. It links the two often not related discourses of transdisciplinarity and intervention research. (ag)

Transformative science

Kläy, A., A. Zimmermann, and F. Schneider (2016): *Statt Eingreifen wider Willen – reflexiv transformative Wissenschaft*. *Bulletin der Vereinigung der Schweizerischen Hochschuldozierenden*, 42(3/4), p. 46-52.

„Intervening science“ hardly corresponds to the mainstream understanding of science: science is usually believed to produce facts, and these are considered to be value-free – according to a clear division of labor between science, society, politics, and the economy. But the University of Bern has committed to integrating sustainable development into research, teaching, and operations. This article discusses how transformative science should take place and what it needs to be able to implement it, based on experience garnered at the University of Bern. (ak)

Krainer, L. and V. Winiwarter (2016): *Die Universität als Akteurin der transformativen Wissenschaft. Konsequenzen für die Messung der Qualität transdisziplinärer Forschung*. *GAIA - Ecological Perspectives for Science and Society*, 25(2), p. 110-116.

In view of grand challenges, transformations and third mission, science and universities are responsible to actively shape social change. The article examines the potential of transdisciplinary research methods and what they have to offer in terms of desired transformation of society. It discusses the difficulties involved in measuring the quality of transdisciplinary research, in particular its social impact and complements the existing catalogue of quality indicators with specific criteria related to the quality of transdisciplinary approaches. (mb)

In this article the authors examine the potential of transdisciplinary research methods and what they have to offer in terms of desired transformation. They suggest to complete the existing catalogue of indicators with specific criteria related to the quality of transdisciplinary approaches. (ag)

Knowledge organization

Szostak, R., C. Gnoli, and M. López-Huertas (2016): *Interdisciplinary Knowledge Organization*. Berlin: Springer.

This book explores the desirability and feasibility of a new approach to classifying documents and ideas (online and in libraries) that is grounded in the phenomena we study and the relationships among these rather than disciplines. It is argued that such an approach would facilitate interdisciplinary research and communication. (rs)

Philosophy and epistemology

Alhadeff-Jones, M. (2016): *Time and the Rhythms of Emancipatory Education. Rethinking the temporal complexity of self and society*. London: Routledge.

Drawing upon time and rhythm studies, complexity theories and educational research, this book provides an epistemological, historical and theoretical framework that will serve as a comprehensive resource for critical reflection on the relationship between the experience of time (conceived from a physical, biological, psychological, sociological and cultural perspective) and education. Articulating contributions made in philosophy, in sciences, and in the arts, this book demonstrates how the study of temporal and rhythmic phenomena requires a transdisciplinary mind-set to grasp the heterogeneous forms of change and influence that shape how humans learn, transform and develop themselves. This is the first book to provide a broad overview of European and North-American theories that inform both the ideas of time and rhythm in educational sciences. (ma)

Benessia, A., et al. (2016): *The Rightful Place of Science: Science on the Verge*. Arizona: Consortium for Science, Policy and Outcomes, Arizona State University.

This book written in 2016 by a group of eight scholars working in the tradition of Post-normal science analyzes the main features and possible causes of the present science's crisis. Science on the Verge exposes many of the fallacies in evidence based governance and provides novel diagnoses and therapy for the current crisis. (js)

Hubert, B. and N. Mathieu, eds (2016): *Interdisciplinarités entre Natures et Sociétés. Colloque de Cerisy*. Bruxelles: Peter Lang.

Nature-Society relationship as a research issue could be qualified as a primary question in that it opens the Pandora box, by addressing on one hand the big divide at the origin of Modernity as it questions the hybridization between the regimes of societal facts and natural ones, and on the other hand the division of scientific work into separated disciplines. Moreover, interdisciplinarity leads to a paradoxical injunction as it requires as well to produce knowledge about what we have to know today as well as what we trusted to be, since two centuries, the conditions of knowledge production. This book is issued from a colloquium held in Cerisy-la-Salle (France) in September 2013 to celebrate the 20th anniversary of the Journal *Natures Sciences Sociétés*. (bh)

Nicolescu, B. (2016): *The Hidden Third*. New York: Quantum Prose (translated from the French by William Garvin)

Liminally landing between prose and poetry, science and art, philosophy and spirituality, *The Hidden Third* disseminates a new renaissance transmission. The general point is that we are on the cusp of actualising a new type of lifeworld – a new renaissance – through aptly configuring new thinking, a new worldview, the temporal scale of which can be measured in hundreds of years as indicated by the advent of modernity following traditional/medieval worldview(s). (bn)

Rowland, S. (2016): *Remembering Dionysus: Revisioning Psychology and Literature in C.G. Jung and James Hillman*. London, New York: Routledge.

Remembering Dionysus, a research monograph emerging from the disciplines of literary studies and the psychology of the unconscious, offers a distinctive argument about transdisciplinarity as proposed by Basarab Nicolescu. It suggests that, viewed from these disciplines, transdisciplinarity reenacts a myth of Dionysus as a necessary dismemberment, followed by a remembering of the god. "God" here denotes the sum of our knowing, what we *believe* about reality as structured through modern disciplines. (bn)

Contributors

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